

## TORREYA

March, 1906

LIBRARY  
NEW YORK  
BOTANICAL  
GARDENSA NOVEMBER DAY IN THE UPPER PART OF THE  
COASTAL PLAIN OF NORTH CAROLINA

BY ROLAND M. HARPER

In passing through the upper edge of the coastal plain of North Carolina several times in the last few years I had often wished for a chance to stop off and examine more closely some of the many interesting things seen from the car windows; but a favorable opportunity for doing so did not arrive until November 17 last. On the morning of that day I alighted at Hamlet, in the fall-line sand-hills of Richmond County, and a few minutes later boarded a train bound for Wilmington. Leaving the train shortly after 10 o'clock at Pembroke, in Robeson County, 32 miles distant, I spent the remaining daylight hours in walking back along the railroad—a perfectly straight and nearly level route—to Laurinburg, in Scotland County, about midway between Hamlet and Pembroke. (The counties mentioned all border on South Carolina.) Notwithstanding the lateness of the season, *Aster squarrosus* and one or two other species were still in bloom, and the weather was all that could be desired.

The fall-line sand-hills and their characteristic flora, which are so well developed for some fifty miles northeast of Hamlet, do not seem to extend more than ten miles southeast of there. Continuing in that direction the face of the country gradually flattens, until at Pembroke, which is some eighty miles from the coast, it seems as level as the flat pine-barrens in the coast counties of Georgia. As to whether the same topography continues all the way to the coast or not I have no definite information; but it seems likely that it does, since the railroad is said to be straight all the way to Wilmington.

[No. 2, Vol. 6, of TORREYA, comprising pages 21-40, was issued February 19, 1906.]

Although no genuine pine-barrens (by pine-barrens being understood those parts of the coastal plain in which pines of the section *Euastrales* [*i. e.*, *P. palustris* or *P. Elliottii*] predominate over all other trees, and grow so far apart as not to give an appreciable amount of shade) were seen between Hamlet and Pembroke,\* the rugged topography and mesophytic forests which are so characteristic of some of the upper parts of the coastal plain in Georgia were likewise wanting. This cannot be fully explained, however, until the details of coastal plain geology in the Carolinas are better known than at present. At some points between Pembroke and Laurinburg, nevertheless, the topography and flora showed striking resemblances to various parts of the upper third of the coastal plain of Georgia, but without having traced the same "plant-formations" through South Carolina I could not correlate them more minutely.

No rocks of any kind were seen in the whole 32 miles, and no ponds or other evidences of limestone, with a single apparent exception noted below. The whole country as far as I went seemed to be covered with sand, presumably of the Columbia formation, and as a natural consequence none of the streams seen were at all muddy. As in New England and the Georgia pine-barrens alike, the smaller streams were quite clear and the larger ones stained brownish with vegetable matter. The mantle of superficial sand varies somewhat in thickness. A little northeast of Hamlet, railroad cuts ten feet deep do not reach the bottom of it, but toward the coast it thins out considerably, and is then easily distinguished from the older formations underlying it.

Much of the country traversed that day, outside of the sand-hills and swamps, is now under cultivation, and most of the rest has been lumbered over. Three pines, *palustris*, *serotina* and *Taxda*, were frequent the whole distance, the last-mentioned the most abundant at present, though it may not have been so before the lumbermen began operations. *Taxodium imbricarium* was also frequent, always in non-alluvial swamps, with a little more

\* At the present writing I have no information as to just how far inland the pine-barrens extend in North Carolina, but this could doubtless be supplied by any botanist who has crossed the whole coastal plain of that state.

humus than it usually tolerates in Georgia. *Chamaecyparis* was seen only in bogs in the sand-hills, extending a considerable distance northeast of Hamlet\* but not more than ten miles southeastward. *Magnolia glauca*, it is scarcely necessary to remark, appeared in all the swamps.

In flat damp soil between the little stations of Pates and Alma in Robeson County were seen quite a number of plants which are chiefly confined to the pine-barrens, such as *Lycopodium alopecuroides*, *L. carolinianum*, *Andropogon corymbosus*, *Campulosus aromaticus*, *Rynchospora axillaris*, *Eriocaulon decangulare*, *Tofieldia glabra*, *Sarracenia flava*, *Ilex glabra*, *Eupatorium rotundifolium*, *Arnica acaulis* and *Marshallia graninifolia*. The *Tofieldia* is of rather local distribution, being known only from the coastal plain of the Carolinas. Many of the specimens of it were still in flower. In ditches along the railroad near the same place *Iris tripetala* was quite common, but I was unable to determine its natural habitat.

Both species of *Zenobia*, which were previously strangers to me (having perhaps never been collected in Georgia), were seen occasionally along here. One of them had already been reported from this county by Mr. C. L. Boynton.†

In several creek swamps between Red Banks and Laurinburg I noticed *Nymphaea sagittifolia*, quite abundant and in excellent condition, most of the specimens showing both floating and submersed leaves and fruit. The geographical distribution of this species is not well understood. It has been reported from the vicinity of Fayetteville in a neighboring county by Mr. Boynton,‡ and it was, of course, discovered in South Carolina. But no one has ever seen it in Georgia, apparently, and at least one of the Alabama stations mentioned in Mohr's Plant Life of Alabama (the one in Tuscaloosa County) is in an artificial pond (as I am informed by Dr. E. A. Smith, who found it there), so does not count.

*Smilax Walteri*, which, like *Nymphaea sagittifolia*, seems to be

\* See Torrey 3: 122. 1903.

† Biltmore Bot. Stud. 1: 146. 1902.

‡ Biltmore Bot. Stud. 1: 148. 1902.

confined to the coastal plain, climbs over bushes in the same swamps, and as its leaves had already fallen its bright red berries made it very conspicuous. *Cyrilla racemiflora*, which has a somewhat similar range, also accompanied it.

In Scotland County, about midway between Maxton and Laurinburg, the railroad passes through a broad shallow depression several acres in extent, which doubtless becomes a pond in wet weather. *Panicum digitarioides* occurs on every square foot—and in fact almost every square inch—of this depression, and *Pinus Taeda* in the shallower parts around the edges. These two species give the place an aspect very like that of some similar depressions about the same distance from the fall-line in Twiggs County, Georgia, but the geographical relations between them have, of course, not yet been worked out. The flora of this pond—or savanna, as it might be termed—has a good deal in common with that of the shallower ponds in the Lower Oligocene region of Georgia. In it I found among other things *Manisuris rugosa* (but the *Manisuris* in similar habitats in Georgia is *M. Chapmani*), *Scleria gracilis*, *Rhexia aristosa* and *Breweria aquatica*. Without having access at present to literature in which details of plant distribution in North Carolina are given, I should imagine that some of these might not have been seen in that vicinity before. For instance, the *Rhexia*, I believe, was not previously known between Delaware and South Carolina.\*

A little nearer Laurinburg I found a few specimens of *Eriophorum virginicum* in a small bog, and I am pretty sure I saw the same thing early in the morning in some sand-hill bogs northeast of Hamlet. It is much rarer in the South than in the North.† *Kuhnistera pinnata* was noticed during the day in several dry sandy places, even a little north of Hamlet. It is strictly confined to the coastal plain, as far as known, and probably does not range much farther north than this.

Judging from what I saw on this November day, an examination of the same territory in summer would prove very interesting, and it is to be hoped that this and other parts of the south-

\* See Bull. Torrey Club 28 : 476. 1901.

† See Rhodora 7 : 72. 1905.



ern coastal plain will soon be explored more thoroughly, not so much with a view of discovering new species or new stations for old ones, which has been the incentive for much of the botanical work which has been done in the past, as of determining the distribution and habitat relations of each and every species. When this is done it will perhaps not be a difficult matter to work out the historical development of the flora with some degree of accuracy.

UNIVERSITY, ALA.

## A NEW BEGONIA FROM BOLIVIA

BY GEORGE V. NASH

During his travels in the interior of Bolivia in 1901-2, Mr. R. S. Williams found an interesting *Begonia*, of which he brought back herbarium material in fruit only. Dr. H. H. Rusby compared this material on a recent visit with the specimens in the herbarium of the Royal Gardens, at Kew, England, and could find nothing there like it. Seed, secured from the herbarium material already referred to, was sown, and in January of this year plants thence derived came into flower at the New York Botanical Garden. This has enabled me to confirm Dr. Rusby's opinion that the plant is a species hitherto unknown. As group characters in the large genus *Begonia* are based upon the structure of the flowers, it is a difficult matter without these safely to state whether a given *Begonia* is new. This plant is unusual in having the perianth in both forms of the flower of a pellucid green, a condition forming an odd and pleasing contrast with the deep orange of the anthers.

Mr. Williams informs me that he found this *Begonia* growing among moss on a damp shady bluff, a short distance to the north of the little town of San Buena Ventura. This place is at an elevation of about four hundred and twenty meters above the sea; it is located in about S. Lat.  $14^{\circ} 25'$  and W. Long.  $67^{\circ} 20'$ , on the Beni River which joins its waters with those of the Mamore River at the southern boundary of Brazil to form the Madeira, one of the tributaries of the Amazon.